Mr. Gary Mongeon
Marietta Redevelopment Corporation
205 Lawrence Street, P.O. Box 609
Marietta, Georgia 30061

March 1, 2005

Report of Limited Asbestos and Lead-Based Paint Screen
Manget Street Redevelopment Project
Cobb County, Georgia
Geo-Hydro Project Number 057929.01

Dear Mr. Mongeon:

Geo-Hydro Engineers, Inc. has completed the requested limited asbestos and lead-based paint screen for the above referenced location. Representative apartment buildings 477, 487, and 494 Frasier Street, and 275 Manget Street were surveyed for suspect asbestos containing materials and suspect lead-based paint. Representative single-family residences 489 and 495 Haley Street were surveyed for suspect asbestos containing materials and suspect lead-based paint. This report and our observations are intended for the benefit of the City of Marietta and the Marietta Redevelopment Corporation. This report may not be used or relied upon by any other party without Geo-Hydro's prior written consent.

SITE DESCRIPTION

The subject site encompasses approximately 7.87 acres and consists of single-family homes, apartment buildings, and wooded land located within and adjacent to the block formed by Manget Street, Frasier Street, Haley Street, and South Avenue in Marietta, Georgia.

477 Frasier Street Apartment: The 477 Frasier Street quadruplex apartment is a two-story building built during the 1940's. The exterior facade includes painted brick and vinyl siding. The vinyl siding has been installed over painted wood siding. The building is covered by a shingle roof system. No pipe insulation was observed in the crawl space except for fiberglass duct insulation wrapped around heating/air conditioning ducts. Interior ceiling and walls are painted drywall with wood baseboards. Some walls and ceilings are covered with textured paint. The interior floors are wood. Some floors are covered with 1-foot by 1-foot vinyl floor tiles. Heating and plumbing systems were observed either without insulation or were insulated with fiberglass.

1000 Cobb Place Blvd., Suite 290 • Kennesaw, Georgia 30144
Phone 770.426.7100 • Fax 770.426.5209
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GEO HYDRO ENGINEERS

487 Frasier Street Apartment: The 487 Frasier Street quadruplex apartment is a two-story building built during the 1940's. The exterior facade includes painted brick and vinyl siding. The vinyl siding has been installed over a fibrous siding. The building is covered by a shingle roof system. No pipe insulation was observed in the crawl space except for fiberglass duct insulation wrapped around heating/air conditioning ducts. Interior ceiling and walls are painted drywall with wood baseboards. The interior floors are wood. Some floors are covered with unglued, tacked-on carpet. Some floors are covered by 1-foot by 1-foot vinyl floor tiles. Heating and plumbing systems were observed either without insulation or were insulated with fiberglass.

494 Frasier Street Apartment: The 494 Frasier Street quadruplex apartment is a two-story building built during the 1940's. The exterior facade includes painted brick and vinyl siding. The vinyl siding has been installed over a fibrous siding. The building is covered by a shingle roof system. No pipe insulation was observed in the crawl space except for fiberglass duct insulation wrapped around heating/air conditioning ducts. Interior ceiling and walls are painted drywall with wood baseboards. The vacant, partially demolished, first floor apartment along the west side of the building was surveyed. The apartment's interior floors are concrete and wood. Floor tile was observed on some of the floors. Heating and plumbing systems were observed either without insulation or were insulated with fiberglass.

275 Manget Street Apartment: The 275 Manget Street quadruplex apartment is a two-story building built during the 1940's. The exterior facade includes brick and fibrous siding. The fibrous siding has been installed over cement board siding. The building is covered by a shingle roof system. No pipe insulation was observed in the crawl space except for fiberglass duct insulation wrapped around heating/air conditioning ducts. Interior ceiling and walls are painted drywall with wood baseboards. The vacant first floor apartment along the west side of the building was surveyed. The apartment's interior floors are concrete and wood. Some floors are covered by 1-foot by 1-foot vinyl floor tiles. Heating and plumbing systems were observed either without insulation or were insulated with fiberglass.

489 Haley Street Single-Family Residence: The 489 Haley Street single-family residence is an abandoned one-story wood frame building built during the 1940's. The exterior facade includes wood and concrete block. The wood exterior is sheathed in asphaltic shingles. The building is covered by a shingle roof system. No pipe insulation was observed in the crawl space. Interior ceilings and walls are painted wood or painted drywall. The interior floors are wood. Floors are covered by tacked-on carpet, floor sheeting, and floor tiles. Heating and plumbing systems were observed either without insulation or were insulated with fiberglass.

495 Haley Street Single-Family Residence: The 495 Haley Street single-family residence is an abandoned, partially demolished, one-story wood frame building built during the 1940's. The exterior facade includes wood and concrete block. The wood exterior is sheathed in asphaltic shingles. The building is covered by a shingle roof system. Interior ceilings and walls are wood covered with painted drywall. The interior floors are wood covered by tacked-on carpet. The kitchen floor is covered by floor sheeting. Heating and plumbing systems were observed without insulation.

PROCEDURES

Limited Asbestos and Lead-Based Paint Screen

Mr. John F. O'Brien, a certified Asbestos-In-Buildings Inspector (Toxic Substances Control Act (TSCA) Title II), performed the limited asbestos and lead-based paint screen on February 15 and 16, 2005. The asbestos screen was performed in general accordance with ASTM's *Draft Standard Guide for Limited Asbestos Screens of Buildings*, dated April 23, 2003. Mr. O'Brien expended reasonable time and effort to identify and sample as many homogeneous areas of suspect asbestos containing building materials (ACBMs) and lead-based paint (LBP) as possible. Visually identified suspect materials were sampled to represent conditions of accessible building space. Nevertheless, there remains a possibility that ACBMs and LBP are present that were undetected or inaccessible during the site visit.

Fifty-two samples of suspect ACBMs were collected from the subject structures and analyzed for asbestos. The suspect asbestos samples were submitted to Materials Analytical Services, Inc. (MAS) in Suwanee, Georgia. MAS is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) and the American Industrial Hygiene Association (AIHA) for bulk asbestos fiber analysis. The samples were analyzed for asbestos content using polarized light microscopy (PLM) and dispersion staining (EPA Method 600/R-93/116).

A total of ten paint chip samples were collected from the subject buildings for total lead analysis. The paint chip samples were submitted to the Environmental Services Network (ESN) laboratory in Kennesaw, Georgia. The samples were analyzed for total lead (EPD Method 6010B). During transportation and storage, a chain-of-custody form was maintained and signed by each individual in possession of the samples. Copies of the analytical test results and chain-of-custody form are included in the Appendix.

FINDINGS

Asbestos Containing Building Materials

The ACBM samples and corresponding percent (%) of asbestos detected are noted below:

477 Frasier Street Apartment:

Stippled Ceiling/Drywall (HA602-1): Laboratory analysis detected 4% chrysotile asbestos in the skim coat between the stippled ceiling material and the drywall in sample HA602-1. No asbestos was detected in stippled ceiling/drywall sample HA602-2, indicating this ceiling may have been from a more recent renovation. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA602-1 indicates the stippled ceilings observed in the apartment buildings of the subject property should be presumed to be a Regulated Asbestos-Containing Material (RACM) containing

more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Popcorn Ceiling/Drywall (HA603-1): Laboratory analysis detected 5% chrysotile asbestos in the skim coats between popcorn ceiling finish and the drywall. No asbestos was detected in popcorn ceiling/drywall sample HA603-2, indicating this ceiling may have been from a more recent renovation. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA603-1 indicates the popcorn ceilings observed in the apartment buildings of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Textured Drywall Wall (HA604-1 and HA604-2): Laboratory analysis detected 3% chrysotile asbestos in the skim coat between textured paints and the drywall. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA604-1 and HA604-2 indicates the textured drywall walls observed in the apartment buildings of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

487 Frasier Street Apartment:

Textured Ceiling/Drywall/Joint Compound (HA5-1): Laboratory analysis detected 3% chrysotile asbestos in the textured ceiling/joint compound. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA5-1 indicates the textured ceilings observed in the apartment buildings of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

494 Frasier Street Apartment:

Floor Tile (Beige & Green)/Mastic (Brown) (HA401-1): Laboratory analysis detected 15% and 18% chrysotile asbestos in the beige and green floor tiles and attached mastics. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA401-1 indicates the floor tiles and mastics observed in the apartment buildings of the subject property should be presumed to be a Category I non-friable ACM as long as the floor tiles are maintained in place or removed using methods that will not cause the tiles to be friable.

Drywall Wall (HA402-2): Laboratory analysis detected 4% chrysotile asbestos in drywall sample HA402-2. No asbestos was detected in drywall sample HA402-1, indicating this wall may have been installed during a more recent renovation. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA402-2 indicates the drywall walls observed in the apartment

buildings of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

275 Manget Street Apartment:

Cement Board Siding (HA502-1): Laboratory analysis detected 20% chrysotile asbestos in the cement board siding. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA502-1 indicates the cement board siding observed on the apartment buildings of the subject property should be presumed to be a Category I non-friable ACM as long as the cement board siding is maintained in place or removed using methods that will not cause the siding to be friable.

489 Haley Street Single-Family Residence:

Roof Shingle/Roof Paper (HA300-1): Laboratory analysis detected 7% chrysotile asbestos in the mastic observed on the roof shingle/roof paper sample. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA300-1 indicates the roof mastic observed on the single-family residences of the subject property should be presumed to be a Category I non-friable ACM as long as the shingle roof system is maintained in place or removed using methods that will not cause the shingle roof system to be friable.

Floor Tile (Beige)/Mastic (Black) (HA305-1): Laboratory analysis detected 5% chrysotile asbestos in the beige floor tile. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA305-1 indicates the floor tiles observed in the single-family residences of the subject property should be presumed to be a Category I non-friable ACM as long as the floor tiles are maintained in place or removed using methods that will not cause the tiles to be friable.

Floor Tile (Beige)/Mastic (Brown) (HA308-1): Laboratory analysis detected 5% chrysotile asbestos in the beige floor tile. Unless further asbestos sampling is conducted, the detection of asbestos in sample HA308-1 indicates the floor tiles observed in the single-family residences of the subject property should be presumed to be a Category I non-friable ACM as long as the floor tiles are maintained in place or removed using methods that will not cause the tiles to be friable.

Drywall Wall (HA306-1): Laboratory analysis detected 5% chrysotile asbestos in the joint compound of drywall sample HA30-1. Unless further asbestos sampling is conducted, the detection of asbestos in the joint compound of sample HA306-1 indicates the drywall observed in the single-family residences of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

495 Haley Street Single-Family Residence:

Drywall Wall (HA203-1): Laboratory analysis detected 4% chrysotile asbestos in the skim coat of drywall sample HA203-1. Unless further asbestos sampling is conducted, the detection of asbestos in the skim coat of sample HA203-1 indicates the drywall observed in the single-family residences of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Lead-Based Paint

The paint chip samples and corresponding percent (%) of lead detected are noted below:

LBP 600: 477 Frasier Street Interior Paint: Laboratory analysis detected 0.366% lead in the paint chip sample. The paint chip sample represents the building's interior paint.

LBP 601: 477 Frasier Street Exterior Paint: Laboratory analysis detected 0.017% lead in the paint chip sample. The paint chip sample represents the building's exterior paint.

LBP 1: 487 Frasier Street Exterior Paint: Laboratory analysis detected 3.565% lead in the paint chip sample. The paint chip sample represents the building's exterior window paint.

LBP 2: 487 Frasier Street Interior Paint: Laboratory analysis detected 0.035% lead in the paint chip sample. The paint chip sample represents the building's exterior paint.

LBP 400: 494 Frasier Street Exterior Paint: Laboratory analysis detected 2.515% lead in the paint chip sample. The paint chip sample represents the building's interior paint.

LBP 401: 494 Frasier Street Interior Paint: Laboratory analysis detected 0.078% lead in the paint chip sample. The paint chip sample represents the building's interior and exterior paint.

LBP 500: 275 Manget Street Interior Paint: Laboratory analysis detected no lead in the paint chip sample. The paint chip sample represents the building's interior paint.

LBP 501: 275 Manget Street Exterior Paint: Laboratory analysis detected 0.064% lead in the paint chip sample. The paint chip sample represents the building's exterior paint.

LBP 300: 489 Haley Street Interior Paint: Laboratory analysis detected 0.023% lead in the paint chip sample. The paint chip sample represents the building's exterior paint.

LBP 201: 495 Haley Street Exterior Paint: Laboratory analysis detected 0.965% lead in the paint chip sample. The paint chip sample represents the building's exterior paint.

The results of the paint chip tests are presented in the Appendix.

CONCLUSIONS AND RECOMMENDATIONS

The detection of lead in the paint chip samples except for the interior paint chip sample LBP 500 collected from 275 Manget Street indicates that lead-based paint was applied to the interior and exterior of the subject property buildings. Demolition debris from commercial projects consisting of components painted with lead-based paint requires Toxic Characteristic (TC) analysis for lead. When the demolition debris does not exhibit TC for lead that exceeds the regulatory threshold of 5 milligrams per kilogram as a hazardous waste, then the waste may be disposed of in a permitted municipal solid waste landfill or a permitted construction and demolition debris landfill. Materials containing lead paint are regulated by the Occupational Safety and Health Administration (OSHA) under its worker protection regulations.

Unless further asbestos sampling is conducted, the detection of asbestos associated with drywall ceilings and walls indicates the drywall observed in the apartment buildings and single-family residences of the subject property should be presumed to be a RACM containing more than 1% asbestos with a high probability of becoming crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Unless further asbestos sampling is conducted, the detection of asbestos associated with floor tiles, shingle roof systems, and cement board siding indicates the floor tiles, shingle roof systems, and cement board siding observed in the apartment buildings and single-family residences of the subject property should be presumed to be a Category I non-friable ACM as long as the materials are maintained in place or removed using methods that will not cause the materials to be friable.

Prior to renovation or demolition, a licensed asbestos abatement contractor should remove and dispose of the building's presumed asbestos containing metal roof system. Provided the Marietta Redevelopment Corporation assumes the liability of roof leaks, the roof system can be cored to collect samples of roofing material (shingle, tar, felt, paper, etc.) to assess the presence or absence of asbestos minerals.

Prior to renovation or demolition, a licensed asbestos abatement contractor should remove and dispose of the presumed asbestos containing building materials of the subject property. Georgia EPD requires notifications for demolition of ACBMs encompassing 10 square feet or greater. Additionally, ACBMs encompassing at least 10 square feet are regulated by the U.S. Environmental Protection Agency (USEPA) under the National Emission Standards for Hazardous Air Pollutants (NESHAP) and also by the Occupational Safety and Health Administration (OSHA) under its worker protection regulations. These regulations require special handling and disposal procedures when asbestos containing materials are disturbed.

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Geo-Hydro Engineers, Inc. has appreciated the opportunity to perform this environmental testing. If you have any questions concerning this report, or if we can be of further assistance, please call us.

Sincerely,

GEO-HYDRO ENGINEERS, INC.

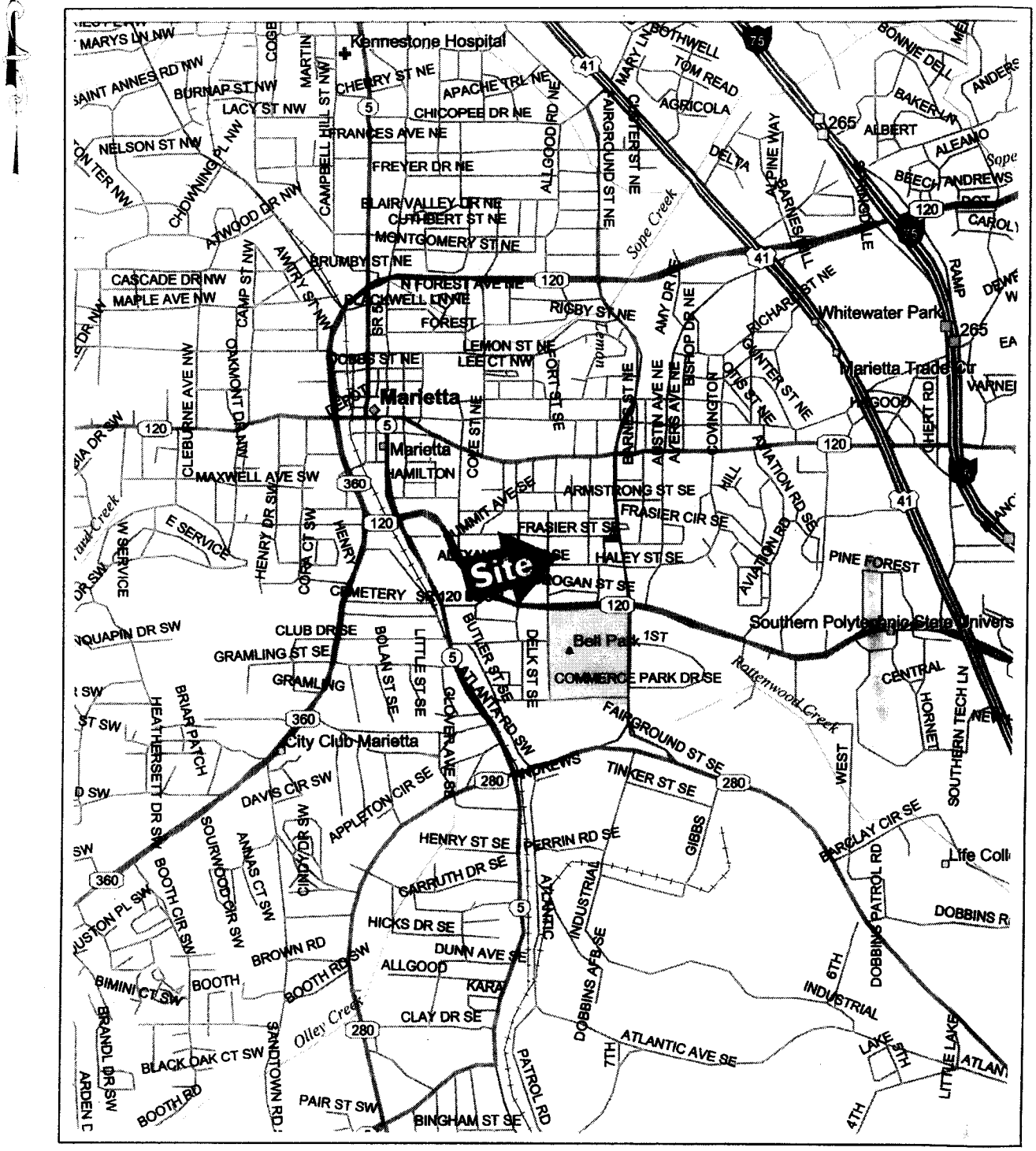
John F. O'Brien, CHMM
Senior Environmental Scientist/Site Inspector

Email: *jobrien@geohydro.com*

JFO/MOS/sh/env/reports/2005/057929.01acm-lbp.doc

GEO HYDRO ENGINEERS

FIGURES



0 0.25 0.5 1 1.5

Approximate Scale, Miles

Figure 1: Site Location Plan

Manget Street Redevelopment Project
Cobb County, Georgia
Geo-Hydro Project Number 057929.01

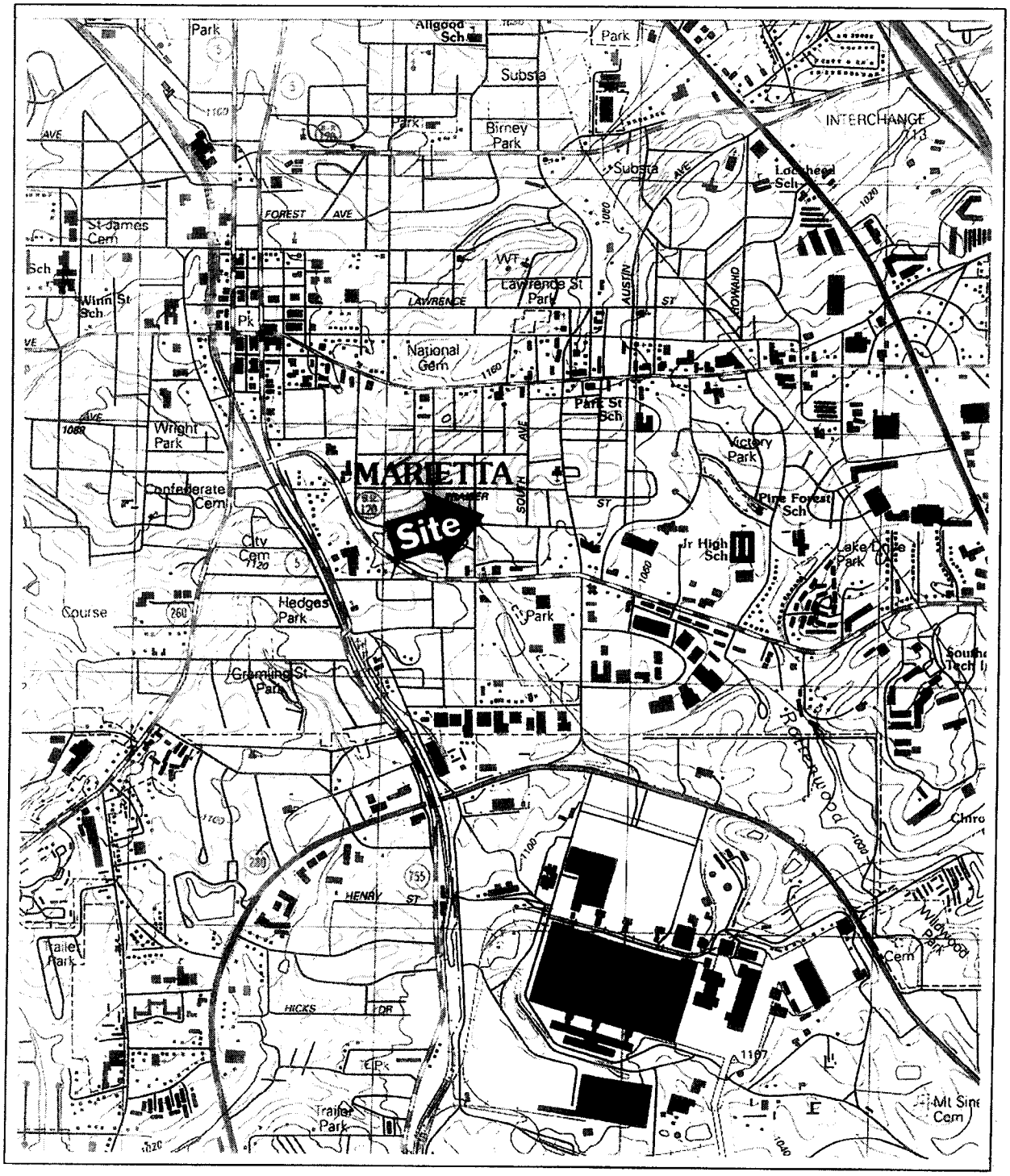
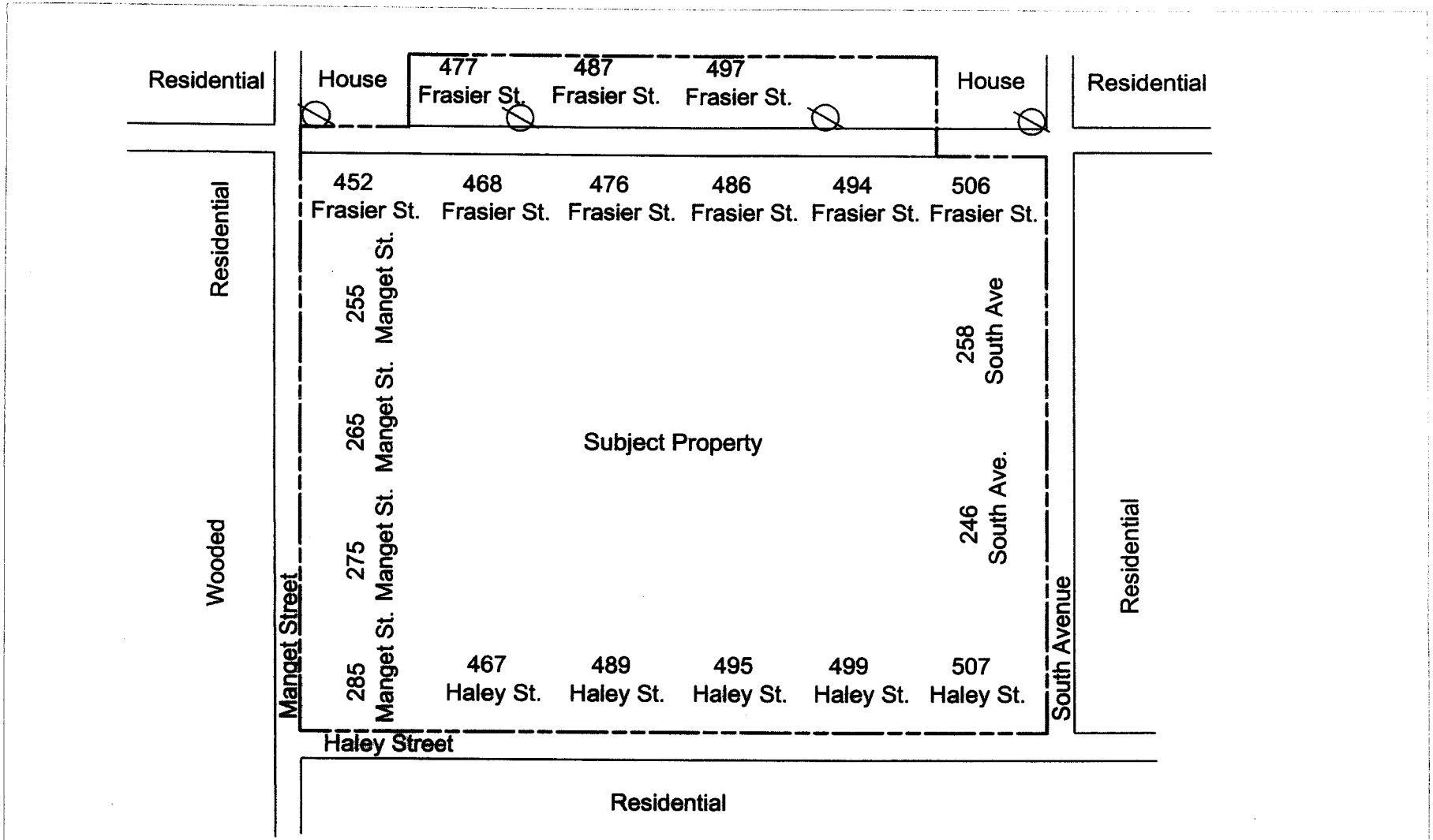


Figure 2: USGS Topographic Quadrangle
(Marietta, Georgia Quadrangle)

Manget Street Redevelopment Project
Cobb County, Georgia
Geo-Hydro Project Number 057929.01

GEO HYDRO ENGINEERS



Not To Scale

LEGEND: ∅ Pole-Mounted Electrical Transformer

Figure 3: Site Plan

Manget Street Redevelopment Project
Cobb County, Georgia
Geo-Hydro Project Numbers 057929.01

SUSPECT ASBESTOS SAMPLE LABORATORY REPORT

GEO HYDRO ENGINEERS

ATLANTA
Corporate Headquarters
3945 Lakefield Court
Suwanee, GA 30024
(770) 866-3200 FAX (770) 866-3259

MAS.
MATERIALS ANALYTICAL SERVICES, INC.

LOS ANGELES
3020 Old Ranch Parkway
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Seal Beach, CA 90740
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285 North Wolfe Road
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www.mastest.com

February 21, 2005

John O'Brien
Geo-Hydro Engineers
1000 Cobb Place Boulevard Suite 290
Kennesaw, GA 30144

RE: PLM Sample Analysis
057929.01 / Frasier Street Apartment Bldg.

Dear Mr. O'Brien:

Enclosed is a summary and the analysis of the samples which were delivered to MAS on February 18, 2005. It was requested that we analyze these samples using polarized light microscopy (PLM) to determine the percentage of asbestos.

The samples were analyzed in accordance with EPA document 600/R-93/116, 'Method for the Determination of Asbestos in Bulk Building Materials'. These analysis results relate only to the specific items analyzed. Any partial reproduction of the Bulk Analysis Report may not be made without the consent of Materials Analytical Services. This report may not be used to imply product endorsement or certification by Materials Analytical Services, the National Voluntary Laboratory Accreditation Program (EPA), or the U.S. Government.

Materials Analytical Services appreciates this opportunity to have been of service to you. We look forward to working with you on future projects.

Sincerely,

William B. Egeland, P.G.

Enc. M35103

MATERIALS ANALYTICAL SERVICES, INC.
3945 LAKEFIELD COURT
SUWANEE, GA 30024
(770) 866-3200

Client: Geo-Hydro Engineers
Job Name: Frasier Street Apartment Bldg.
Job Number: 057929.01
Reviewer:

Summary of Results of analysis by Polarized Light Microscopy (PLM)

CLIENT #	MAS ID # - SPL #	LOCATION	MATERIAL	ANALYSIS
HA601-1	M35103- 001	477 Frasier kitchen room F	floor tile black & white w/brown mastic	NO ASBESTOS OBSERVED
HA602-1	M35103- 002a	477 Frasier bath room E	stiple ceiling/drywall	NO ASBESTOS OBSERVED
HA602-1	M35103- 002b	477 Frasier bath room E	skimcoat between stiple ceiling & drywall	4% Chrysotile
HA602-2	M35103- 003	477 Frasier bath room I	stiple ceiling/drywall	NO ASBESTOS OBSERVED
HA603-1	M35103- 004a	477 Frasier room J	popcorn ceiling/drywall	NO ASBESTOS OBSERVED
HA603-1	M35103- 004b	477 Frasier room J	skimcoats between popcorn ceiling finish & drywall	5% Chrysotile
HA603-2	M35103- 005	477 Frasier room B	popcorn ceiling/drywall	NO ASBESTOS OBSERVED
HA604-1	M35103- 006a	477 Frasier room C wall	textured (paints) drywall	NO ASBESTOS OBSERVED
HA604-1	M35103- 006b	477 Frasier room C wall	Skimcoat between textured (paints) & drywall	3% Chrysotile
HA604-2	M35103- 007a	477 Frasier room K wall	textured drywall	NO ASBESTOS OBSERVED
HA604-2	M35103- 007b	477 Frasier room K wall	Skimcoat between textured (paints) & drywall	3% Chrysotile

REQUEST RESULTS E-MAILED IN 48-Hours

M35103

CHAIN OF CUSTODY

e-mail : Jobrien@geohydro.com

Bulk

MAS

3945 Lakefield Court
Suwanee, Georgia 30024
PH: (770) 866-3200
FAX: (770) 866-3259

Co. Name: Geo-Hydro Engineers Phone: 770-426-7100
Address: 1000 Cobb Place Blvd Fax: 770-426-5209
Kennesaw, Georgia 30144

Project #: 057929.01
Project Name: Frasier street Apartment Bldg.
Work Area Description:
Project Representative: John O'Brien
MAS Project Number:

Sheet 1 of 1

16Feb05	HA601-1	477 Frasier - Kitchen Room F	Floor Tile Black + White Mastic Brown
	HA602-1	477 Frasier - Bath Room E	Stiple Ceiling / Drywall
	HA602-2	477 Frasier - Bath Room I	Stiple Ceiling / Drywall
	HA603-1	477 Frasier - Room J	Popcorn Ceiling / Drywall
	HA603-2	477 Frasier - Room B	Popcorn Ceiling / Drywall
	HA604-1	477 Frasier - Room C (wall)	Textured Drywall
	HA604-2	477 Frasier - Room K (wall)	Textured Drywall

First Transfer By:	17 Feb 05	UPS		
Second Transfer By:	John O'Brien		2/18/05	
Third Transfer By:				

Please show % asbestos in joint compound separate from % asbestos in drywall.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35103 - 001 **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA601-1

Location 477 Frasier kitchen room F

Type_Mat floor tile black & white w/brown mastic

Gross Visual Marbled white fine grained tile with gummyamber adhesive, woody debris

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology			
Pleochroism			
Refract Index			
Sign^			
Extinction			
Birefringence			
Melt			
Fiber Name			

ASBESTOS MINERALS	**EST. VOL. %**
	NO ASBESTOS OBSERVED
Chrysotile.....	
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS	
Cellulose -rib&woody	4

NON FIBROUS COMPONENTS	
Mica	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35103 - 002a **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA602-1

Location 477 Frasier bath room E

Type_Mat stiple ceiling/drywall

Gross Visual White stipled compound on paint / tan felt on off-white chalky compound

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology			
Pleochroism			
Refract Index			
Sign^			
Extinction			
Birefringence			
Melt			
Fiber Name			

ASBESTOS MINERALS	**EST. VOL. %**
	NO ASBESTOS OBSERVED
Chrysotile.....	
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS

Cellulose -ribbony	15

NON FIBROUS COMPONENTS

Opaques	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35103 - 002b **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA602-1

Location 477 Frasier bath room E

Type_Mat skimcoat between stiple ceiling & drywall

Gross Visual Golden tan fine grained compound between stipleling on paint and drywall

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology	wavy		
Pleochroism	none		
Refract Index	1.550/1.545		
Sign^	positive		
Extinction	parallel		
Birefringence	low		
Melt	no		
Fiber Name	Chrysotile		

ASBESTOS MINERALS	**EST. VOL. %**
Chrysotile.....	4
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS

NON FIBROUS COMPONENTS

Mica	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl#	M35103 - 003	**Analyst**	Paul Hess	**Date**	2/21/2005
ClientName	Geo-Hydro Engineers			**ClientSpl**	HA602-2
Location	477 Frasier bath room I				
Type_Mat	stiple ceiling/drywall				

Gross Visual Off-white paint on white stipled compound on tan felt on off-white chalky compound

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology			
Pleochroism			
Refract Index			
Sign^			
Extinction			
Birefringence			
Melt			
Fiber Name			

ASBESTOS MINERALS	**EST. VOL. %**
	NO ASBESTOS OBSERVED
Chrysotile.....	
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS

Cellulose -ribbony	15

NON FIBROUS COMPONENTS

Opaques	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35103 - 004a **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA603-1

Location 477 Frasier room J

Type_Mat popcorn ceiling/drywall

Gross Visual Light beige paint on white fine grained compound with foam pellets / Tan ribbony fiber felt on off-white chalky compound

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology			
Pleochroism			
Refract Index			
Sign^			
Extinction			
Birefringence			
Melt			
Fiber Name			

ASBESTOS MINERALS	**EST. VOL. %**
	NO ASBESTOS OBSERVED
Chrysotile.....	
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS	
Cellulose -ribbony	17

NON FIBROUS COMPONENTS	
Synthetic foam	X
Opaques	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl#	M35103 - 004b	**Analyst**	Paul Hess	**Date**	2/21/2005
ClientName	Geo-Hydro Engineers			**ClientSpl**	HA603-1
Location	477 Frasier room J				
Type_Mat	skimcoats between popcorn ceiling finish & drywall				

Gross Visual Golden fine grained compounds with imbedded ribbony fiber tape

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology	wavy		
Pleochroism	none		
Refract Index	1.550/1.545		
Sign^	positive		
Extinction	parallel		
Birefringence	low		
Melt	no		
Fiber Name	Chrysotile		

ASBESTOS MINERALS	**EST. VOL. %**
Chrysotile.....	5
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS

Cellulose -ribbony	17

NON FIBROUS COMPONENTS

Opaques	X
Mica	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl#	M35103 - 005	**Analyst**	Paul Hess	**Date**	2/21/2005
ClientName	Geo-Hydro Engineers			**ClientSpl**	HA603-2
Location	477 Frasier room B				
Type_Mat	popcorn ceiling/drywall				

Gross Visual Light beige paint on white fine grained compound with foam pellets on Tan ribbony fiber felt on off-white chalky compound

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology			
Pleochroism			
Refract Index			
Sign^			
Extinction			
Birefringence			
Melt			
Fiber Name			

ASBESTOS MINERALS	**EST. VOL. %**
	NO ASBESTOS OBSERVED
Chrysotile.....	
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS

Cellulose -ribbony	15

NON FIBROUS COMPONENTS

Synthetic foam	X
Opaques	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35103 - 006a **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA604-1

Location 477 Frasier room C wall

Type_Mat textured (paints) drywall

Gross Visual Multi layered paints / tan ribbony fiber felt on off-white chalky compound

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology			
Pleochroism			
Refract Index			
Sign^			
Extinction			
Birefringence			
Melt			
Fiber Name			

ASBESTOS MINERALS	**EST. VOL. %**
	NO ASBESTOS OBSERVED
Chrysotile.....	
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS

Cellulose -ribbony	15

NON FIBROUS COMPONENTS

Opaques	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl#	M35103 - 006b	**Analyst**	Paul Hess	**Date**	2/21/2005
ClientName	Geo-Hydro Engineers			**ClientSpl**	HA604-1
Location	477 Frasier room C wall				
Type_Mat	Skimcoat between textured (paints) & drywall				

Gross Visual Golden fine grained compound

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology	wavy		
Pleochroism	none		
Refract Index	1.550/1.545		
Sign^	positive		
Extinction	parallel		
Birefringence	low		
Melt	no		
Fiber Name	Chrysotile		

ASBESTOS MINERALS	**EST. VOL. %**
Chrysotile.....	3
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS

Cellulose -ribbony	Trace

NON FIBROUS COMPONENTS

Mica	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35103 - 007a **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA604-2

Location 477 Frasier room K wall

Type_Mat textured drywall

Gross Visual Multi layered paints / tan ribbony fiber felt on off-white chalky compound

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology			
Pleochroism			
Refract Index			
Sign^			
Extinction			
Birefringence			
Melt			
Fiber Name			

ASBESTOS MINERALS	**EST. VOL. %**
	NO ASBESTOS OBSERVED
Chrysotile.....	
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS	
Cellulose -ribbony	15

NON FIBROUS COMPONENTS	
Opaques	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35103 - 007b **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA604-2

Location 477 Frasier room K wall

Type_Mat Skimcoat between textured (paints) & drywall

Gross Visual Golden fine grained compound

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology	wavy		
Pleochroism	none		
Refract Index	1.550/1.545		
Sign^	positive		
Extinction	parallel		
Birefringence	low		
Melt	no		
Fiber Name	Chrysotile		

ASBESTOS MINERALS	**EST. VOL. %**
Chrysotile.....	3
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS

Cellulose -ribbony	Trace

NON FIBROUS COMPONENTS

Mica	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

ATLANTA
Corporate Headquarters
3945 Lakefield Court
Suwanee, GA 30024
(770) 866-3200 FAX (770) 866-3259

MAS
MATERIALS ANALYTICAL SERVICES, INC.

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FAX (919) 829-5518

SUNNYVALE
285 North Wolfe Road
Suite 101
Sunnyvale, CA 94085
(408) 737-9700
FAX (408) 737-9791

www.mastest.com

February 21, 2005

John O'Brien
Geo-Hydro Engineers
1000 Cobb Place Boulevard Suite 290
Kennesaw, GA 30144

RE: PLM Sample Analysis
057929.01 / Frasier Street Apartment Bldg.

Dear Mr. O'Brien:

Enclosed is a summary and the analysis of the samples which were delivered to MAS on February 18, 2005. It was requested that we analyze these samples using polarized light microscopy (PLM) to determine the percentage of asbestos.

The samples were analyzed in accordance with EPA document 600/R-93/116, 'Method for the Determination of Asbestos in Bulk Building Materials'. These analysis results relate only to the specific items analyzed. Any partial reproduction of the Bulk Analysis Report may not be made without the consent of Materials Analytical Services. This report may not be used to imply product endorsement or certification by Materials Analytical Services, the National Voluntary Laboratory Accreditation Program (EPA), or the U.S. Government.

Materials Analytical Services appreciates this opportunity to have been of service to you. We look forward to working with you on future projects.

Sincerely,

WBE

William B. Egeland, P.G.

Enc. M35101

REQUEST E-MAIL
RESULTS IN 48 HOURS

M35101 e-mail Jobrien@geohydro.com

CHAIN OF CUSTODY

Bulk

MAS

Co. Name: Geo-Hydro Engineers Phone: 770-426-7100
Address: 1000 Cobb Place Blvd Fax: 770 426-5209
Kennesaw, Georgia 30144

3945 Lakefield Court
Suwanee, Georgia 30024
PH: (770) 866-3200
FAX: (770) 866-3259

Project #: 05792.01
Project Name: Frasier Street
Work Area Description: Apartment Bldg.
Project Representative: John O'Brien
MAS Project Number:

Sheet 1 of 1

17FEB05	HA1-1	487 Frasier - Rear	Brown Fibrous Siding
	HA2-1	487 Frasier - Front Awning Roof	Roof Shingle
	HA3-1	487 Frasier - Room 487-1	Floor Tile (1x1 white)/Mastic Beige
	HA5-1	487 Frasier - Room 487-Ca	Text. Ceiling/Dry wall/Joint Compound
	HA6-1	487 Frasier - Room 487-2	Drywall (wall - 1st Floor)
	HA6-3	487 Frasier - Room 487-24	Drywall (wall - 2nd Floor)
	HA6-4	487 Frasier - Room 487-31	Drywall (Ceiling - 2nd Floor)

First Transfer By:	17FEB05 John OB	UPS	2/18/05	
Second Transfer By:				
Third Transfer By:				

Please show % asbestos in joint compound separate from drywall % asbestos.

MATERIALS ANALYTICAL SERVICES, INC.
3945 LAKEFIELD COURT
SUWANEE, GA 30024
(770) 866-3200

Client: Geo-Hydro Engineers
Job Name: Frasier Street Apartment Bldg.
Job Number: 057929.01
Reviewer:

Summary of Results of analysis by Polarized Light Microscopy (PLM)

CLIENT #	MAS ID # - SPL #	LOCATION	MATERIAL	ANALYSIS
HA1-1	M35101- 001	487 Frasier-rear	brown fibrous siding	NO ASBESTOS OBSERVED
HA2-1	M35101- 002	487 Frasier-front awning roof	roof shingle	NO ASBESTOS OBSERVED
HA3-1	M35101- 003	487 Frasier-room 487-1	white floor tile & beige mastic	NO ASBESTOS OBSERVED
HA5-1	M35101- 004a	487 Frasier-room 487-6	textured ceiling/joint compound	3% Chrysotile
HA5-1	M35101- 004b	487 Frasier-room 487-6	drywall	NO ASBESTOS OBSERVED
HA6-1	M35101- 005	487 Frasier-room 487-2, wall 1st floor	drywall	NO ASBESTOS OBSERVED
HA6-3	M35101- 006	487 Frasier-room 487-24, wall 2nd floor	drywall	NO ASBESTOS OBSERVED
HA6-4	M35101- 007	487 Frasier-room 487-31, ceiling 2nd floor	drywall	NO ASBESTOS OBSERVED

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35101 - 001 **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA1-1

Location 487 Frasier-rear

Type_Mat brown fibrous siding

Gross Visual Off-white paint on brown compressed fibrous body

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology			
Pleochroism			
Refract Index			
Sign^			
Extinction			
Birefringence			
Melt			
Fiber Name			

ASBESTOS MINERALS	**EST. VOL. %** NO ASBESTOS OBSERVED
Chrysotile.....	
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS	
Cellulose -rib&woody	97

NON FIBROUS COMPONENTS	
Opaques	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35101 - 002 **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA2-1

Location 487 Frasier-front awning roof

Type_Mat roof shingle

Gross Visual Gray granules in tar with glass fibers, black glossy tar mastic

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology			
Pleochroism			
Refract Index			
Sign^			
Extinction			
Birefringence			
Melt			
Fiber Name			

ASBESTOS MINERALS	**EST. VOL. %**
	NO ASBESTOS OBSERVED
Chrysotile.....	
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS

Fib glass -isotropic	18

NON FIBROUS COMPONENTS

Mineral grains	X
Binder	X

Binder Description Bitumen

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35101 - 003 **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA3-1

Location 487 Frasier-room 487-1

Type_Mat white floor tile & beige mastic

Gross Visual White fine grained tile with gray smears, tan gummy adhesive

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology			
Pleochroism			
Refract Index			
Sign^			
Extinction			
Birefringence			
Melt			
Fiber Name			

ASBESTOS MINERALS	**EST. VOL. %**
	NO ASBESTOS OBSERVED
Chrysotile.....	
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS	
Cellulose -ribbony	Trace

NON FIBROUS COMPONENTS	
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35101 - 004a **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA5-1

Location 487 Frasier-room 487-6

Type_Mat textured ceiling/joint compound

Gross Visual Off-white paint on off-white fine grained compound.

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology	wavy		
Pleochroism	none		
Refract Index	1.550/1.545		
Sign^	positive		
Extinction	parallel		
Birefringence	low		
Melt	no		
Fiber Name	Chrysotile		

ASBESTOS MINERALS	**EST. VOL. %**
Chrysotile.....	3
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS

NON FIBROUS COMPONENTS

Opaques	X
Mica	X
Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.

MATERIALS ANALYTICAL SERVICES, INC.
PLM ANALYSIS

Proj#-Spl# M35101 - 004b **Analyst** Paul Hess **Date** 2/21/2005

ClientName Geo-Hydro Engineers **ClientSpl** HA5-1

Location 487 Frasier-room 487-6

Type_Mat drywall

Gross Visual Brown ribbony fiber felt on light gray chalky compound

OPTICAL DATA FOR ASBESTOS IDENTIFICATION

Morphology			
Pleochroism			
Refract Index			
Sign^			
Extinction			
Birefringence			
Melt			
Fiber Name			

ASBESTOS MINERALS

EST. VOL. %

NO ASBESTOS OBSERVED

Chrysotile.....	
Amosite.....	
Crocidolite.....	
Tremolite/Actinolite.....	
Anthophyllite.....	

OTHER FIBROUS COMPONENTS

Cellulose -ribbony	15

NON FIBROUS COMPONENTS

Mineral grains	X
Binder	X

Binder Description

Comments X = Materials detected.